

ABSTRACT

THESIS: Nature and Causes of Low Birth Weight of Babies: A Statistical Analysis

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Low birth weight of babies has been associated with increased mortality rate at infancy. What's more, babies with low birthweight have higher death rates at later childhood and adolescence. They also suffer from many other problems. For these reasons, it is very important for us to know which factors are responsible for causing low birthweight of babies. Although a good number of researches are available in the literature there are lots of unresolved issues and there is a need for further studies on this subject to find better estimates of parameters on the nature and causes of low birth weight of babies. In our research, the main objective is to find the key factors that may be responsible for low birth weight of babies. We find two very interesting data sets, one of them is longitudinal in nature, where we have both numerical and categorical values of birthweight of babies. It gives us a wonderful opportunity to employ both linear and logistic regression models on these data. We also employed recent and sophisticated diagnostics for the validity of our results that include tests for normality, detection of influential observations, high leverage points and outliers, test for multicollinearity and discrimination. This study reveals that variables such as weight of mothers at last menstrual period, race, smoking habit during pregnancy, history of hypertension and presence of uterine irritability have significant impacts on the low birthweight of babies.